LAW OFFICES
DENNISON, SCHULTZ & MACDONALD
SUITE 105
1727 KING STREET
ALEXANDRIA, VIRGINIA 22314-2700
703 837-9600

REMARKS

The Office Action of June 14, 2006 has been carefully considered.

The specification has been amended to add a reference to the PCT application, and to use proper subject matter headings.

Claims 1-10 and 12 have been rejected under 35 USC 103(a) over Hilaire et al in view of Gorgerino et al and Williamson.

Hilaire et al discloses a ferroalloy for inoculation of cast iron, comprising, by weight, from 0.005 to 3% of at least one metal from the rare earth group (col. 2, lines 11 to 19) and between 0.05 and 3% of at least one metal from the group bismuth, lead and antimony. The remainder is essentially silicon and iron.

Claims 1-12 have been rewritten as new claims 13-24, which are of essentially the same scope of claims 1-12. Present claim 12 specifies that lanthanum accounts for at least 90% of the rare earth metal content. The effect of lanthanum is to lower the number and importance of micro-shrinkage flaws in the cast iron.

This effect is known from Gorgerino et al, which discloses a method for inoculating cast iron comprising a step of adding lanthanum to the cast iron in a high proportion relative to rare earth metal content, and more particularly in a proportion higher than 90% of the rare earth metal content. *However, Gorgerino et al does not disclose or suggest the use of lanthanum in an inoculating alloy comprising bismuth, lead and/or antimony.*

The effect of lanthanum in such a combination with bismuth could not be foreseen by one of ordinary skill in the art. First, one should be aware that bismuth is well known for its poisoning effect which causes the degeneration of the

graphite spheroidal structure. According to Hilaire et al, this poisoning effect can be reduced by adding rare earth metals in well-determined proportions, with the rare earth metals being generally added as misch metal.

Such a combination between rare earth metals as claimed and bismuth allows for a highly efficient inoculation by the ferroalloy. Indeed, such an inoculant allows for a level of nodules per mm^2 in the cast iron that reaches about a thousand, when conventional inoculants only allow reaching a few hundred nodules per mm^2.

This reinforced inoculating efficiency leads to the conclusion that rare earth metals possess peculiar chemical properties when associated with bismuth. Such a conclusion could not be drawn from a simple combination between Hilaire et al and Gorgerino et al. Indeed, it could not be foreseen that lanthanum would maintain the special anti-shrinkage properties while ensuring an excellent inoculating efficiency when associated with bismuth.

An inoculant according to the invention also allows minimizing some of known rare earth metal drawbacks, namely the carbide generating effect of cerium and the perlite generating effect of lanthanum when those rare earth metals are used in high proportions.

One of ordinary skill in the art, looking to solve the micro-shrinkage problem would have found in Gorgerino et al information about the effect of lanthanum **alone** but no information regarding lanthanum in association with bismuth specifically.

The general background regarding cast iron clearly shows that associations between various metals are specific and the effects of one on another can not be predicted as easily from their properties when used alone.

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In the present case, it was surprising that lanthanum used in high proportion and in combination with bismuth would be an effective inoculant, while the cited art would have led one either to the use of lanthanum in high proportion but alone, or use lanthanum in misch metal at low levels. The result of the claimed combination, a highly efficient inoculation which reduces shrinkage, could not be anticipated and obtained from the cited documents.

Williamson discloses use of lanthanide series elements as inoculants, but does not otherwise lead one of ordinary skill in the art to the claimed invention.

Withdrawal of this rejection is requested.

Claim 11 has been rejected under 35 USC 103(a) over Hilaire et al in view of Gorgerino et al and Craig et al, which has been cited to show inoculation with pellets. Craig et al does not cure the defects of the primary references, and withdrawal of this rejection is requested.

Claims 1-4, 7-8, 10 and 12 have been rejected under 35 USC 103(a) over Margaria et al in view of Gorgerino et al.

Margaria et al discloses an inoculant containing 0.005 to 3% rare earths, 0.005 to 3% bismuth, lead and/or antimony, and 0.3 to 3% calcium. Lanthanum is not specifically mentioned.

Gorgerino et al, as noted above, discloses the use of antimony alone, but not in combination with bismuth, lead and/or antimony, and does not disclose or suggest that in such combinations, the lanthanum should make up at least 90% by weight of the rare earth metals.

Withdrawal of this rejection is requested.

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In view of the foregoing amendments and remarks, Applicant submits that the present application is now in condition for allowance. An early allowance of the December 12, 2006application with amended claims is earnestly solicited.

Respectfully submitted,

Ira J. Schultz
Registration No. 28666

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